

plerumque terminalibus paniculatis; perigonii tubo obconico, lobis ovatis; drupa ovoideo-globosa (haud semi-pollicari), putamine leviusculo. — Oahu and Hawaii.

Var. *LATIFOLIUM*: arborescens; foliis magis coriaceis brevius petiolatis late ovatis ovalibus vel subrotundis; cyma densiflora. — *S. paniculatum*, *Hook. & Arn., Bot. Beech. Voy.* p. 94. — Craters of Hawaii and Maui.

2. *SANTALUM ELLIPTICUM* (*Gaudich.*): foliis chartaceis ellipticis oblongis seu ovali-obovatis, petioli gracili; cymis paniculisve sæpius axillaribus; perigonii tubo brevi, lobis ovatis; fructu *S. Freycinetiani*.

3. *SANTALUM PYRULARIUM* (*Gray in Bot. Expl. Exped. ined.*): foliis subcoriaceis oblongis supra lucidis venulosis subtus glaucis, petiolo gracili; cymis sæpius axillaribus; perigonii tubo cylindracco, lobis oblongis; drupa pyriformi (cum pedicello incrassato pollicari), putamine valde ruminato-rimoso. — Kauai, Sandwich Islands.

Professor Gray also communicated a paper (read by title at the Annual Meeting), being, —

*Characters of New Algæ, chiefly from Japan and Adjacent Regions, collected by Charles Wright in the North Pacific Exploring Expedition under Captain John Rodgers. Communicated by Request of the Commander of the Expedition. By Professor WILLIAM H. HARVEY, of Dublin University.*

1. *SARGASSUM* (*SCHIZOPHYLLA*) *PINNATIFIDUM*: caule compresso distiche pinnato, pinnis e margine egredientibus; phyllodiis linearibus profunde pinnatifidis, laciniis paucis (2-4) costatis argute serratis vel foliorum superiorum integris; vesiculis ellipsoideis folio sæpe bipartito serrato coronatis; receptaculis longissime laxèque racemosis cylindraceis inermibus.

Loo Choo Islands.

2. *SARGASSUM* (*HOLOPHYLLA*) *FILICINUM*: caule filiformi longissimo (basi ignoto); ramis sæpius secundis; foliis longe petiolatis lineariblongis tenuibus profunde pinnatifidis, laciniis alternis linearibus truncatis apice bi-tridentatis; vesiculis sphaericis folio pinnatifido coronatis; receptaculis siliquæformibus apice ramulorum solitariis.

East coast of Japan.

3. *SARGASSUM* (*HOLOPHYLLA*) *RINGGOLDIANUM*: caule compresso pinnatim ramoso, ramis horizontalibus complanatis ancipitibus flexuosis pinnatim compositis, pinnulis angulatis; foliis lanceolatis integerrimis verticalibus crassis basi attenuatis immerse costatis, junioribus subnerviis; vesiculis magnis oblongo-ellipsoideis ad basin ramulorum solitariis folio coronatis; receptaculis racemosis junioribus inermibus.

East coast of Japan, and at Simoda.

4. *SARGASSUM* (*HOLOPHYLLA*) *RODGERSIANUM*: (caule ignoto) ramis ad ortum retrofractis? compressis flexuosis pinnatim decompositis, ramulis decompositis; foliis omnibus patentissimis angustissime linearibus immerse costatis subnerviis integerrimis; vesiculis longe petiolatis sphaericis longissime mucronatis vel folio filiformi 1-2-unciali coronatis; receptaculis linearibus inermibus obtusis demum racemosis.

East coast of Japan, floating at sea.

5. *SARGASSUM* (*HOLOPHYLLA*) *SILYQUASTRUM*? (*Ag.*), var. *PYRIFORMUM*: (caule ignoto) ramis ramulisque ad ortum retrofractis compresso-planis ancipitibus decompositis, superioribus in ramulis angustissimis desinentibus; foliis inferioribus lanceolatis oblongisve distanter serrulatis immerse costatis, superioribus angustissime linearibus integerrimis subnerviis; vesiculis magnis ad basin ramulorum solitariis pyriformibus longe mucronatis; receptaculis linearibus inermibus denique in ramulo racemosis.

Simoda, Japan, on rocks at low tide.

6. *SARGASSUM* (*HOLOPHYLLA*) *CORYNECARPUM*: caule triquetro, ramis ad ortum retrofractis; foliis radicalibus inferioribusque elliptico-oblongis latis subintegerrimis vel repando-dentatis crassis immerse costatis, superioribus ramuliformibus angustissimis costatis paucis; vesiculis magnis ellipsoideis mucronatis; receptaculis clavatis plano-compressis inermibus emarginatis racemosis.

Simoda, Japan.

7. *SARGASSUM* (*CARPOPHYLLA*) *ASSIMILE*: caule tereti laevissimo; foliis e basi valde obliqua cuneata oblongis obtusis minute glandulosis argute dentatis nervo infra apicem evanescente costatis; vesiculis in petiolo sursum compresso ipsis vix breviori sphaericis muticis; receptaculis foliiferis saepius furcatis, laciniis integerrimis vel remote denticulatis.

Loo Choo Islands, in tide-pools.

8. *CYSTOPHYLLUM FUSIFORME*: radice ramoso; frondibus ex collo in caules plures divisus; caulibus indivisis tereti-compressis, ramis lateralibus undique egredientibus crebris brevibus ramulis subfasciculatis onustis, ramulis lineari-fusiforribus utrinque acutis medio sæpe vesiculiferis; vesiculis fusiformibus; receptaculis ignotis.

Var.  $\beta$ . *CLAVIGERUM*: ramis ramulo longissimo claviformi infra apicem vesiculifero subtensis, ramulis filiformibus.

On rocks at low tide, Simoda.  $\beta$ . Hakodadi, Japan.

9. *FUCUS (FUCODIUM) WRIGHTII*: fronde lato-lineari complanata decomposite dichotoma ramosissima; vesiculis ovalibus v. bilobis in ramis superioribus vel sæpe in axillis ipsis immersis; receptaculis ignotis.

Straits of Sangar, Japan.

10. *FUCUS (FUCODIUM) BABINGTONII*: fronde angustissima compresso-plana decomposite dichotoma fastigiata; vesiculis oblongis angustissimis in ramis superioribus infra axillas immersis; receptaculis linearibus terminalibus simplicibus furcatisve.

Japan (Dr. Babington in Herb. T. C. D.): rocks at Simoda; Hong Kong.

11. *ECKLONIA WRIGHTII*: stipite brevi robusto compresso apice subpalmatim ramoso (vel crebre dichotomo?); ramis in frondes pin-nati-lobatas expansis, laciniis sublanceolatis basi angustatis inæqualiter argute serratis.

Simoda, Japan, on rocks at low tide.

12. *ALARIA PINNATIFIDA*: stipiti ancipite sursum complanato crispato-marginato in costam latam apice desinente; lamina latissima profunde pinnatifido-lobata, laciniis oblongis simplicibus furcatisve sinibus rotundatis, pinnis crassis obovatis brevibus.

Simoda, Japan.

13. *COSTARIA TURNERI* (Grev.); var. *PERTUSA*: stipiti ex radice ramosa plano in laminam longissimam (11 - 12-pedalem) lanceolatam 4-costatam bulloso-inflatam demum foraminibus pertusam expanso.

Straits of Sangar and Hakodadi Bay, Japan.

14. *DICTYOTA OBTUSANGULA*: fronde anguste lineari incrassata succulenta opaca decomposite dichotoma; axillis omnibus latissime rotundatis; laciniis patentibus divaricatisve, supremis irregularibus, apicibus obtusis nunc multifidis.

Loo Choo and Ousima. (Also common at the Friendly Islands.)

15. *ODONTHALIA OBTUSANGULA*: fronde plano-compressa in parte superiori immerse costata lineari alterne decomposita, ramis distantibus patentibus plus minus compositis junioribus sæpe margine denticulatis, ramulis alternis furcatis corymbosis erectis, laciniis ultimis anguste subulatis; axillis omnibus rotundatis apicibusque acutis.

Straits of Sangar, Japan; floating.

16. *RYTIPHLEA COMPLANATA* (Ag.); var. *PUSILLA*: fronde nana complanata anguste lineari flabelliformi subfastigiata pinnatim decomposita, pinnis erecto-patentibus crebris pl. m. pinnatis, pinnulis subulatis alternis. — An. sp. distincta?

Hakodadi, Japan.

17. *CHONDRIA CRASSICAULIS*: fronde crassissima succulenta vage ramosa, ramis sparsis vel subverticillatis incrassatis flexuosis basi constrictis, ramulis sparsis fasciculatisve claviformibus obtusissimis basi valde constrictis; cystocarpis? — *Laurencia*, sp.? Harv. in Alg. Morrow, Japan Exped.

Japan: Simoda, *Dr. Morrow*; Hakodadi.

18. *POLYSIPHONIA STIMPSONI*: fronde capillari rigidiuscula vage ramosa; caule ramisque primariis corticatis arcuatis, ramis secundariis horizontaliter patentibus divaricatisque subsecundis brevibus parum ramulosis articulatis, ramulis subulatis patentibus, articulis diametro æqualibus vel brevioribus 4-siphoniis, geniculis opacis; ceramidiis?

Japan; dredged in Hakodadi Bay by *Mr. Stimpson*, the zoölogist of the Expedition.

19. *POLYSIPHONIA CALACANTHA*: fronde fucescente capillari 4-siphonia ecorticata vage ramosa, ramis sparsis flexuosis linearibus simpliciusculisque per totam longitudinem ramulis brevissimis quadrifariis horizontalibus divaricato-multifidis spinulosis confertissime onustis, articulis brevissimis; spinulis ramulorum apice fibrilliferis. (*Polysiph.* no. 13, Harv. Alg. Ceylon.)

Loo Choo Islands, and Tanegasima, Japan, south of Kiu-siu.

20. *POLYSIPHONIA FLABELLULATA*: pusilla, nigrescens; fronde capillari flaccida brevi repetitive dichotoma fastigiata, axillis acutis, apicibus vix attenuatis, articulis 6-siphoniis omnibus diametro brevioribus.

Tanegasima, Japan.

21. *POLYSIPHONIA HARLANDII*: fronde 4-siphonia corticata tessellata setacea parum ramosa fucescente, ramis virgatis simplicibus attenu-

atis, ramulis quoquoersum egredientibus brevibus basi simplicibus nudis apice pluries furcatis fastigiatis, apicibus acutis, articulis ramulorum pellucidis diametro subbrevioribus; tetrasporis sub apice ramulorum solitariis.

Hong Kong.

22. WRANGELIA? TANEGANA: fronde corticata; ramis quoquoersum egredientibus ramellis densissime vestitis, ramellis brevissimis verticillatis crassis bis terve furcatis mucronatis, articulis ramellorum diametro æqualibus ad genicula valde constrictis.

Tanegasima, Japan. — Fruit unknown: perhaps a *Callithamnion* or *Halurus*.

23. DESMIA JAPONICA: fronde latiuscula compresso-plana subfimbriiformi decomposito-pinnata, pinnis irregularibus lato-linearibus, pinnulis inæqualibus subulatis, axillis omnibus rotundatis.

Simoda, Japan; on rocks at low tide.

24. GRACILARIA GIGAS: fronde cartilagineo-carnosa crassissima tereti siccitate collapsa elongata vage ramosa, ramis alternis secundisve longissimis simpliciusculis nudis vel ramulis paucis filiformibus obsessis, axillis rotundatis, apicibus attenuatis.

Simoda, Japan; on rocks at low tide.

25. GRACILARIA EUCHEUMIOIDES: fronde primaria decumbente crassissima compressa vage et parce ramosa, ramis clavæformibus simplicibus vel apice furcatis compressis nudis vel hic illic tuberculis onustis tunc erectiuscula pl. m. pinnatim ramosa, apicibus obtusis. (Harv. Alg. Ins. Amic. no. 35.)

Ousima, and the proper Loo Choo Islands.

26. SUHRIA JAPONICA: fronde costa crassissima percurta lineari (prolificationibus a costa et margine emissis) decomposite ramosa, margine integerrimo; sporophyllis? sæpius varie lobatis, apicibus obtusissimis.

Simoda, Japan.

27. CAULACANTHUS COMPRESSUS: fronde pusilla dichotomo-multifida fastigiata, laciniis primariis sursum latoribus compressisque, stipite ramulisque teretibus, axillis rotundatis, ramulis spinæformibus sparsis patentibus simplicibus ramosisve.

Loo Choo Islands; in rock-pools.

28. GALAXAURA DISTENTA: fronde tenui subcompressa continua

nitida decomposita dichotoma fastigiata, laciniis infra axillas cuneato-dilatatis complanatis, axillis obtusis, apicibus perfossis.

Ousima, north of the Loo Choo group.

29. *GYMNOGONGRUS LIGULATUS*; var. *ANGUSTUS*: fronde stipitata plano-compressa rigide cartilaginea flabelliformi lineari dichotoma, axillis distantibus patentibus, ramis linearibus obtusis apice sæpe proliferis.

Simoda, Japan; on rocks at low tide.

30. *GIGARTINA LANCIFOLIA*: stipite tereti-compresso ramoso; ramis basi compressis subcanaliculatis apice in folia lanceolata plana ciliata utrinque spinulis conspersa desinentibus.

Hakodadi Bay, Japan; on rocks at low tide.

31. *GIGARTINA AFFINIS*: stipite tereti-compresso dichotomo; ramis frondes dichotomo-decompositas fastigiatas gerentibus, segmentis margine incrassatis subcanaliculatis pluries furcatis, laciniis linearibus, apicibus obtusis; papillis nullis? (Aff. *G. mamillosæ*.)

With the preceding.

32. *GIGARTINA TENELLA*: fronde pusilla compressa anguste lineari distiche ramosa, ramis alternis sparsisve arcuatis attenuatis, ramulis paucis subulatis patentibus sæpius secundis, apicibus acutis.

Kaikai-sima, north of the proper Loo Choo group.

33. *HALOSACCION (HALOCÆLIA) JAPONICUM*, Harv. (charac. emendato): fronde simplicissima cartilaginea rigida basi et apice attenuata ramulis crebris patentibus filiformibus densissime obsessa.

Hakodadi, Japan.

34. *HALOSACCION (HALOCÆLIA) WRIGHTII*: fronde tenui-membranacea flaccida simpliciuscula basi et apice attenuata pinnatim ramosa, pinnis pinnulisque patentibus utrinque attenuatis acutis subdistichis.

Hakodadi, Japan.

35. *HALOSACCION (HALOCÆLIA) INTESTINALIS*: fronde clavato-intestinæformi longissima simplicissima basi attenuata apice obtusissima coriacea; strato peripherico crasso filis verticalibus constituto tetrasporas oblongas includente.

Arakamtchetchene Island, within Behring's Straits.

36. *GLOIOPELTIS COLIFORMIS*: fronde intestinæformi membranacea (filo centrali mox evanido) cava et inflata subsimplici basi et apice

attenuata nunc apice prolifera nunc furcata; cystocarpiis numerosissimis.

Japan (*Dr. Babington*): Hakodadi and Straits of Sangar.

37. ENDOCLADIA COMPLANATA: fronde ex stipite tereti mox compressa tunc complanata decomposite dichotoma, laciniis lato-linearibus vel cuneatis ex margine et disco ramulos spinosos emittentibus margine fimbriatis.

Simoda, Japan; on rocks near high-water mark.

38. CAULERPA AMICORUM: surculo crassiusculo glabro; ramis erectis basi nudis vage decomposite ramosis ramulis virgatis, ramentis bi-trifariis subulatis incurvis acutis, inferioribus brevissimis conicis, (*Harv. Alg. Ins. Amic. no. 62.*)

Ousima, north of the proper Loo Choo Islands. (*Friendly Islands, of larger size.*)

39. CAULERPA BRACHYPUS: surculo glabro; phyllodiis subsessilibus elliptico-oblongis basi et apice obtusissimis planis enervibus integerrimis nunc hic illic constrictis vel proliferis.

Tanegasima, Japan.

#### HALICORYNE, Harv. (*Nov. Gen.*)

Frons calcareo-incrustata, claviformis, simplex, ex axi tubuliformi monosiphonio continuo ramulisque verticillatis saccatis unicellulosis demum sporiferis constituta. Sporæ ex materia viridi ramulorum vetustorum formatae, numerosae, sphaericae, nucleo denso viridi in peridermide hyalino membranaceo incluso. — Alga habitu *Dasyclado* proxima, fructu substantiaque diversa.

40. HALICORYNNE WRIGHTII. — Loo Choo Islands; in muddy pools, at low tide. Thinly incrustated with carbonate of lime.

41. VALONIA FORBESII: cellula maxima pyriformi incurva basi in stipite infundibuliformi attenuata.

Loo Choo Islands. (*Also Ceylon.*)

42. ENTEROMORPHA CÆRULESCENS: fronde cærulescente membranacea longissime tubulosa vage ramosa, ramis filiformibus attenuatis simplicibus, ramulis sparsis setaceis.

Loo Choo Islands; in stagnant pools of fresh water.

43. CLADOPHORA WRIGHTIANA: maxima, ultra setacea; fronde stipitata rigide membranacea robusta trichotoma, ramis bis terve divis

discretis erectis, ultimis virgatis; ramulis oppositis ternisve appressis 1-2-cellulosis; articulis inferioribus diametro multoties ramulorum 5-10-plo longioribus ad genicula constrictis; apicibus obtusis.

Simoda, Japan; in rock-pools at low water.

44. *CLADOPHORA STIMPSONI*: caespitosa, capillaris; fronde tenui-membranacea flaccida laete virente di-trichotoma, axillis majoribus distantibus patentibusque, ramis pluries furcatis, ramulis ad ramos minores superiores saepius pectinato-secundis longiusculis; articulis inferioribus longissimis filiformi-cylindraceutis; ramulorum diametro 5-8-plo longioribus ad genicula subconstrictis; apicibus subacutis.

Hakodadi Bay, *Mr. Stimpson*.

45. *CLADOPHORA DENSE*: dense caespitosa, fastigiata; fronde basi radicante erecta stipitata biunciali capillari rigidiuscula dichotoma; ramis pluries furcatis erectis, superioribus alternis sparsisve, amulis paucis; articulis primariis longissimis, caeteris diametro 5-10-plo longioribus ad genicula constrictis; apicibus obtusis.

Hakodadi Bay, Japan; on rocks at half-tide.

46. *CLADOPHORA FASTIGIATA*: caespitosa, nigro-viridis, basi radicans; filis vix uncialibus setaceis rigidis strictis trichotomis pluries divisis fastigiatis, ramis ramulisque omnibus oppositis erectis vel appressis; articulis diametro 8-10-plo longioribus, apicibus obtusis.

Loo Choo Islands.

47. *CLADOPHORA OLIGOCLADA*: caespitosa, laetevirens, mollissima, lubrica; filis elongatis (3-4-uncialibus) capillaribus parcissime vage et distanter ramosis, ramis longissimis simpliciusculis, ramulis secundis brevissimis unicellulosis; articulis ramorum diametro 4-6-plo longioribus materie viridissima repletis pellucido-marginatis.

Loo Choo Islands.

48. *CLADOPHORA UNCINELLA*: pusilla, uncialis, densissime caespitosa, laetevirens; filis trichotome ramosissimis capillaribus rigidiusculis; ramis primariis secundariisque oppositis, penultimis ramulisque falcato-secundis crispatis; ramulis valde hamatis; articulis primariis diametro pluries ramulorum 4-5-plo longioribus; geniculis contractis.

Ousima, north of the proper Loo Choo Islands.

49. *CLADOPHORA POLARIS*: caespitosa, laetevirens, mollis, nitida; filis capillaribus strictissimis decomposite ramosis; ramis ramulisque erectis (axillis angustissimis), superioribus clavato-incrassatis succu-



lentis obtusissimis; articulis inferioribus diametro 2-3-plo supremis multoties longioribus.

Semiavinia Bay, Arctic Asia. (Also at Whalefish Islands, Davis's Straits, and in the Arctic Ocean, lat. 76°, *Dr. Lyall*.)

50. RIVULARIA OPACA: fronde (minori) vesiculosa difformi rigida opaca nigro-viridi; filis moniliformibus laxiusculis.

Loo Choo Islands.

51. LYNGBYA ATROVIRENS: cæspitibus longe fluitantibus atrovirentibus comosis; filis crassiusculis liberis glaucis densissime striatis; vagina crassa subopaca sæpe rugosa.

Loo Choo Islands.

52. LYNGBYA EFFUSA: cæspite effusa nigro-viridi; filis semiuncialibus tenuibus intricatis flexuosis glaucis; vagina angusta lævi.

Loo Choo Islands. An obscure production.

53. LYNGBYA ATROPURPUREA: cæspite atropurpurea comosa; filis tenuissimis fluitantibus strictiusculis violaceis, striis inconspicuis. (*Harv. Alg. Ins. Amic. no. 118.*)

Bonin Islands; on corals. (Also at the Friendly Islands.)

54. CHROOLEPUS CHINENSIS: majuscula, rupestris; filis in cæspite (2-unc.) tomentosa luteo-viridi siccitate pallide glaucescenti intertextis decumbentibus vage ramosis; ramis horizontaliter patentibus recurvis sæpius secundis; ramulis paucis multisve patentibus; sporidiis lateralibus sparsis; articulis diametro duplo longioribus.

Hong Kong; on damp rocks in the mountains.

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**Four hundred and seventy-first meeting.**

November 9, 1859. — STATED MEETING.

The PRESIDENT in the chair.

The Corresponding Secretary read several letters relative to the exchanges of the Academy.

He also read a "Note upon the Allanite found at East Bradford, Pennsylvania, by William Sharswood, A. M."

Professor Gabriel Valentin, of Berne, Switzerland, was elected a Foreign Honorary Member in Class II. Section 2 (Botany).